

*In the claims*

1-12. (Canceled)

13. (Currently amended) A method for acquisition, storage, and retrieval of cell screening data on a computer system, comprising the steps of :

- a) providing a plate containing wells, wherein the wells comprise cells;
- b) storing input parameters used for screening of the plate in a computer system database;
- c) repeating steps (i)-(ix) for a desired [arrays] number of wells:
  - i) selecting an individual well on the plate,
  - ii) collecting subcellular image data from the cells in the well,
  - iii) storing the subcellular image data in the computer system database,
  - iv) collecting feature data from the subcellular image data,
  - v) storing the feature data in the computer system database,
  - vi) calculating well summary data using the subcellular image data and the feature data collected from the well;
  - vii) storing the well summary data in the computer system database;
  - viii) calculating plate summary data using the well summary data from the computer system database; and
  - ix) storing the plate summary data in the computer system database;

wherein the subcellular image data, the feature data, the well summary data, and the plate summary data can be retrieved from the computer system database.

14. (Previously presented) A computer readable medium having stored therein instructions for causing a computer to execute the method of Claim 13.

15. (Previously presented) The method of Claim 13 wherein the wells include cells treated with a test compound.

16. (Previously presented) The method of Claim 13 wherein the plate comprises a microplate.

17. (Previously presented) The method of Claim 13 wherein the computer system database includes microplate data.

18. (Currently amended) The method of Claim 13 wherein the computer system database includes photographic subcellular image data.

19-22. (Canceled)

23. (Previously presented) The method of claim 13 wherein the input parameters used for screening of the plate include parameters for one or more of the following: identifying nuclei; identifying cytoplasm; identifying different fluorescent reagents; cell selection settings, number of cells to be analyzed per well, and range of size, shape, and intensity of cells to be analyzed.

24. (Currently amended) The method of claim 13 wherein the feature data include one or more of: size, shape, intensity, location, area, perimeter, height, width, total fluorescence intensity, average fluorescent intensity, ratio of fluorescent intensities, and difference in fluorescent intensities[, and number].

25. (Currently amended) The method of claim 24 wherein the step of collecting well summary data includes calculating one or more of size, shape, intensity, location, area, perimeter, height, width, total fluorescence intensity, average fluorescent intensity, ratio of fluorescent intensities, and difference in fluorescent intensities[, and number].